Appendix B

Equity Research
North America

Industry

Telecom - Cable

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COMPANIES FEATURED

AOL Time Warner (AOL-$52)	Strong Buy - V
AT&T Corp. (T-$21)	Strong Buy
Adelphia (ADLAC-$41)	Outperform
Cablevision (CVC-$57)	Neutral
Charter (CHTR-$23)	Strong Buy
Comcast (CMCSK-$43)	Strong Buy
Cox (COX-$43)	Outperform
Insight (ICCI-$26)	Outperform
Rogers (RCI'BT-$15)	Outperform
RCN Corp. (RCNC-$5)	Neutral - V
UnitedGlobalCom (UCOMA-$9)	Strong Buy - V

RECENT REPORTS

Charter Communications: Optimal Capital Structure
Richard Bilotti June 7, 2001

Cablevision Systems: How to Value Cablevision NY Group
Richard Bilotti May 18, 2001

Cox Communications: 1Q01 Results Strong Subscriber Growth Exceeds Estimates
Richard Bilotti May 11, 2001

Industry Overview

June 29, 2001

The Sequel: Open Access Is Better

- **Cable modem deployment enters Phase II this fall**
  Phase I proved the technology worked, and demand was robust. In Phase II, ISPs will market cable modem service, which we estimate will save MSOs $200 per addition in marketing cost.
- **Raising expected modem deployment levels for U.S. cable sector**
  Combination of stronger than expected demand, wholesale access agreements and weaker DSL deployment - 2005 U.S. modem estimate up 10% to 23.5 million.
- **Surprise! Residential data ARPU is increasing**
  Following DSL price hikes, cable companies have begun increasing prices on cable modem service. Tiered speeds and bundling should create further pricing power.
- **DOCSIS 1.1 and capital costs also positive factors**
  DOCSIS 1.1, which is being tested today, allows for better data network control, security, and quality of service. Cable modem prices have fallen faster than expected.

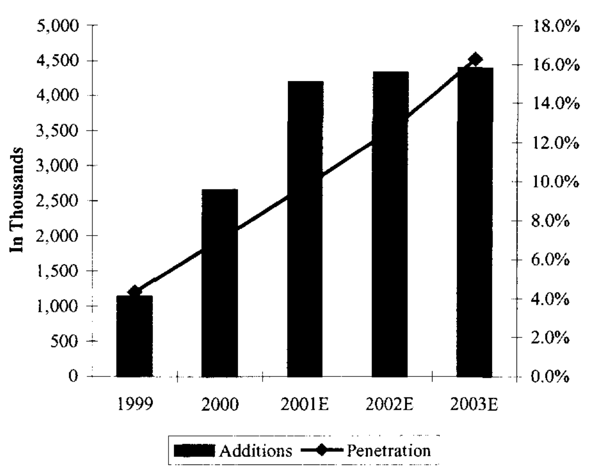
The Sequel: Open Access Is Better

Please see our initial Open Access report, Open Access Is Good, *published October 31, 2000, for a more detailed discussion of the economics and technology.*

Summary and Investment Conclusion
Our investment thesis on broadband cable was originally founded on the high return on invested capital (ROIC) generated by new service deployments — digital video and cable modem service. We believe the returns on these new services and on derivative products generated by these two platforms are increasing and will reach 30% on a weighted-average basis by 2002.

On the high-end of this ROIC scale (see Exhibit 2) is managed access, or wholesale data. These two terms are the commercial manifestations of what was called open access, or unaffiliated ISPs provisioned over the cable network. While each cable operator may take a slightly different approach to provisioning multiple-ISP service over its cable network, we believe all will benefit significantly by leveraging their networks at a better than 50% ROIC.

Exhibit 1
North American Data Additions and Penetration Level



Source: Morgan Stanley Research

Today, AOL Time Warner is leading the sector into the multiple-ISP environment. The impetus behind this deployment being the FCC merger order preventing an AOL broadband deployment prior to an unaffiliated ISP deployment. AT&T Broadband was the first to announce an open access trial due in part to regulatory pressure which has since subsided. Comcast and Cox have both announced trials, with Cox including AOL Plus in its Arkansas system trial. In addition, these two operators have announced that they will no longer use Excite@Home (ATHM, $2.30, Not Rated) as their exclusive ISP as of December 4, 2001.

Two Attractive Models: Wholesale and Retail
Our hypothetical wholesale and retail data business models generate returns well above our assumed 11.75% cost of capital (see Exhibit 2). However, we believe that the wholesale model actually generates the higher ROI, reaching levels above 50% after three years of deployment. This compares to the 25–30% ROI generated through the retail, or proprietary model (see Exhibits 11 and 12).

Both proprietary data and third-party ISP subscribers generate over 30% ROIC for the cable operator.

Wholesale Data May Be More Economically Attractive
The delta between the two models is due primarily to marketing costs. On the revenue side, our wholesale model assumes that an ISP pays the cable operator $27 per month for access and connectivity per subscriber. This compares to the $35–40 the operator receives in the proprietary model. However, in the proprietary model, the cable operator spends 30% of its revenues on backbone costs. Under the wholesale model, the ISP must pay for traffic after it leaves the cable head-end. In other words, after the head-end, the IP packets are carried at the ISP's expense (AT&T Broadband may have a different model given its long-haul network assets).

The most significant driver of the high ROIC from wholesale is the elimination of marketing costs. Historically, cable companies have not been focused on either quality or quantity of marketing. Prior to the new service rollouts of the last 4–5 years, typical cable companies ran marketing at 2% of revenues. Today, we estimate most cable companies average 4–6% of revenues on marketing costs.

Cable operators benefit from ISP's marketing dollars aimed at selling cable modem service. In addition, major ISPs may have superior marketing strategies and brand recognition.

We believe the MSOs have increased their marketing levels — primarily a result of DBS pressure and the effort to drive digital and data deployments — for the following reasons. First, the historical difficulty provisioning data service has required additional marketing costs. Second, the cable operators have poor reputations for customer service. Finally, the Regional Bell Operating Companies (RBOCs) now pose the most significant competitive threat to the cable operators growth expectations.

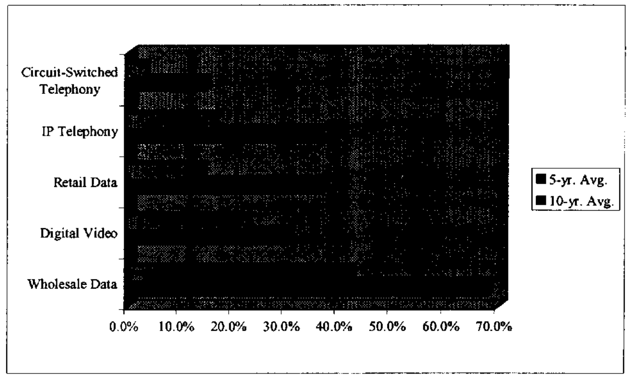
We estimate that the cable operators spend $200 per gross data subscriber addition. This level of marketing has allowed the sector to reach approximately 7–8% penetration of upgraded homes passed at the end of 1Q01. Wholesale data service shifts all of the marketing expense to the ISP, which typically spends a greater percentage of revenues on marketing and may have greater consumer brand recognition (in the case of AOL, Earthlink, MSN). This is a double benefit for the cable operator: it saves marketing dollars that can be allocated to other next generation services, and its data unit growth benefits from the ISPs marketing efforts.

Comparing Wholesale and Retail Strategies

The wholesale model generates a present value per cable home passed of $285 and a 10-year average ROIC of 60–70%. The currently deployed proprietary model generates a present value of $230 per cable home passed and a 10-year average ROIC of 35-40%. Our discounted cash flow assumptions include an 11.75% weighted average cost of capital (WACC) and a 5% long-term growth rate. This proprietary model assumes zero advertising and e-commerce revenues. In addition, we did not adjust the present value of the wholesale model for the effect of a churn from retail to wholesale.

Exhibit 2

5 and 10 Year Average ROICs



Source: Morgan Stanley Research

The ROICs for both models have benefited from two phenomena over the last 3–9 months, both of which have improved our long-term outlook for the businesses. First, cable modem equipment prices have fallen faster than expected, with current DOCSIS 1.0 compliant modems selling for less than $200. Second, led by the DSL providers, cable companies have begun to raise prices in some of their markets on data services. Cox and AT&T Broadband recently announced increases of $5–6 per month per subscriber in some of their modem deployed markets. We now assume a flat $35 monthly revenue per subscriber throughout the 10-year proprietary model.

Exhibit 3

Revised Assumptions - Retail (R) vs Wholesale (W)

Assumption	Previous	Revised
Average ARPU - R	$30.50	$35.00
Average ARPU - W	$22.50	$27.00
MSO % of CapEx - R	100%	100%
MSO % of CapEx - W	50%	100%
Avg. 10-Yr. ROIC - R	25%	36%
Avg. 10-Yr. ROIC - W	80%	68%
2001 NPV per HP - R	$165	$233
2001 NPV per HP - W	$250	$285

Source: Morgan Stanley Research

The pricing power enjoyed by the MSOs will likely be enhanced further through two expected developments. First, quality of service capabilities are being built into DOCSIS 1.1 cable modems, which will allow MSOs to offer more secure data connections and at variable speeds.

This tiered approach will give consumers more choice and give cable operators the ability to better target specific user groups. Second, the use of third-party ISPs such as AOL and Earthlink, will give MSOs another weapon in pricing and in maintaining their lead over the RBOCs. The use of premium data services such as a bundled AOL broadband and an IP second phone line could be one example.

Our long-term outlook has improved...

- Cable modem equipment prices have plummeted below $200 for DOCSIS 1.0-compliant modems.
- Pricing has actually increased in some DSL and cable modem markets, with the threat of rapid price deterioration all but eliminated.
- The work at CableLabs to promote interoperability and the future IP services enabled by the modem indicate increased vendor participation, more service provisioning, and higher returns for cable operators.
- We continue to believe that cable modems will represent 55% of the residential DSL/CM market in 2005 (see Exhibit 8).

Possible Economic Terms on Commercial Wholesale Agreements

We expect ISPs to pay cable operators approximately $27 per month per subscriber for network access, tier 1 customer service, provisioning, and capital spending related to that subscriber. This varies somewhat from our previous assumptions in that the cable companies will now be responsible for all the capital spending. However, the average retail ARPU has increased from $30–32 to $35 per month, and the revenue split is now 67.5%, up from 60%. Thus, the wholesale rate increased from $22–23 to $27 per month.

Possible open access terms...

- MSO receives $27 per month per wholesale sub (on a $40 monthly rate, 67.5% of gross).
- MSO is responsible for tier 1 customer service, installation, and all capital requirements.
- ISP receives 100% of advertising and e-commerce revenues, as well as profit above $27 payment to MSO.
- MSO retains 75% of the revenues generated by "premium" services.

In addition, the ISPs will retain 100% of the advertising and e-commerce revenues related to the data business, and the cable operator will give up 25% of the revenues generated by premium services provisioned through the third-party ISP.

With approximately 80–90% of the US cable footprint activated for modem service by the end of 2001, we expect the fixed capital necessary to provision multiple ISPs to be minimal. For the most part, we believe that cable operators will need to replace some of the installed cable modem termination systems (CMTSs) with DOCSIS 1.1 compliant or next-generation routers than can better manage source-based routing.

The ISP withholds 100% of the advertising and e-commerce revenue streams. At present, online advertising revenues are negligible for most ISPs, with AOL generating approximately $8 per month per subscriber. We estimate that under the proprietary model, cable operators would eventually need to generate $5 of advertising revenue per month per subscriber to bring the retail model net present value (NPV) to the same level as the wholesale model.

We do not expect all agreements between operators and ISPs to be identical. Rather, they will likely fit into a broad set of common terms. The two largest US cable operators, AT&T Broadband and AOL Time Warner Cable, are taking two different approaches to provisioning unaffiliated ISPs. AT&T Broadband approaches it from a network operator perspective, positioning the service as a way to better leverage and monetize its network assets while maintaining a customer connection through AT&T branded services.

AOL Time Warner is, in fact, the largest ISP as well as the second largest US cable operator. In addition, AOL Time Warner is under regulatory order to provision other ISPs on its network prior to offering AOL. This dynamic has made deployment a priority and will lead the customer to deal more directly with the ISP than the cable operator. The differences between the two open access approaches will be most evident in terms of the customer experience. AT&T Broadband's trial has featured an online service agent developed in-house, where the subscriber can sign up, sign off, or switch ISPs all through one service-agent site. AOL Time Warner will require subscribers to call their ISP to disconnect and go to the other ISP's registration site to sign up for service.

We expect AOL Time Warner to begin deploying unaffiliated ISPs and AOL over its cable networks in the second half of 2001. It is unclear to us when AT&T Broadband will begin to offer unaffiliated ISPs over its cable network, although we believe that the mutual benefits of AOL over AT&T's cable plant are significant, and we would expect an agreement by the end of this year.

Potential Risks to the Wholesale Strategy

We believe that there are two significant risks to the current wholesale strategy. First, advertising and e-commerce revenues could become significant, with the MSOs being left out of this upside. Second, ISPs could gain control of the customer and cannibalize the MSO's video, data, and possibly telephony businesses. Under the proprietary model, the MSO remains the de facto ISP and retains control over additional services such as voice, video, and data. In addition, the advertising and e-commerce revenues generated would also accrue to the cable operator.

Noting that the expected terms include a claim to 75% of the revenues related to "premium" services going to the MSO, we maintain that a risk exists in this area. Premium services remain a yet-to-be-defined set of services and reclaiming revenues from these services may prove elusive after the ISP service is already provisioned. We expect it will be difficult to identify services provisioned by the ISP after the fact, that the service might fall under the "premium service" label and therefore should accrue revenue to the MSO.

Risks to Wholesale Strategy

- ISP provisions services that would have accrued to the MSO.
- ISP provisions services such as IP telephony and video streaming that eat into the MSO's existing revenue base.
- Advertising and e-commerce revenues (of which the ISP retains 100%) become significant over time, and the MSOs upside is capped.

An example of this bearish case might involve AOL, perhaps the most powerful Internet brand in the world, in our view, with over 30 million subscribers worldwide. We expect AOL to someday provision broadband Internet access, paging and telephone service, video and audio streaming, and interactive advertising, thereby leading to e-commerce transactions — all for one bundled premium price. If this AOL service is provisioned, for example, over a Comcast cable network, it will be critical for Comcast to monitor and set economic terms around the provisioning of these services.

In other words, the monthly price of cable modem Internet service could steadily rise over time as additional services are layered on, with the ISP capturing all of the upside and the cable operator retaining only $27 per month. Even worse, if the ISP provisions an IP telephony service, and video streaming to the PC becomes a meaningful business, the ISP could then actually be reducing the video and telephony opportunity for the cable operator.

While we believe these risks remain remote, they are significant and represent the bearish case around wholesale data services. We believe these risks have thus far tempered the operators' enthusiasm for wholesale data and led them to proceed cautiously.

Exhibit 4

Open Access Strategies

Cable Operator	Open access strategy to date
Adelphia	Adelphia has been somewhat behind on its network upgrade to two-way active, with only 50% of its footprint marketing data at the end of 2000. Adelphia is an @Home exclusive partner in its acquired Century systems, and uses its own Powerlink service in its other markets.
[redacted]	[redacted]
Cablevision	No announced open access trial to date, remains a proprietary model throughout most of its systems with OptimumOnline service - arguably always an "open" service. Retains a small number of @Home subscribers in some of its New Jersey systems. Does not have an exclusive ISP agreement in place.
[redacted]	[redacted]
Comcast	Has announced an open access trial with Juno Online in its Philadelphia system. Trial has begun as Comcast will end its @Home exclusivity as of December 4, 2001. Plans to take back network assets from Excite@Home to better manage customer data experience.
[redacted]	[redacted]
Insight	Insight has been frustrated by its @Home support, and has scaled back its data deployment in the first half of 2001. Although focused more on digital deployment today, Insight will be heavily marketing its data product in 2002.
[redacted]	[redacted]

Source: Morgan Stanley Research

Home Networking and DSL Update

Home networking, which is becoming somewhat of a misnomer or catch-all phrase, was highlighted at The National Cable and Telecommunications Association (NTCA) Conference in Chicago in June. It is important to note, as the home networking panel did, that the majority of cable subscribers are not likely to buy "home networking," but rather services such as IP telephony (second line through the modem) and multiple PC connectivity.

In a panel moderated by Steve Silva, chief technology officer for Charter Communications, several networking vendors discussed the migration to residential networking from the more traditional enterprise space, as well as the potential business models networking could present for cable operators.

Exhibit 5

How'd They Do...?

(In Thousands)

Cable Modem Subscribers (In Thousands)

	MSDW 1Q01	Actual 1Q01	Prior 2001E	Revised 2001E	Prior 2002E	Revised 2002E
Adelphia	207	197	419	406	724	703
AT&T (1)	1,200	1,280	1,766	1,716	2,567	2,637
Cablevision	291	304	475	500	665	739
Charter Communications	270	305	538	634	877	996
Comcast (2)	494	542	802	905	1,313	1,519
Cox Communications	570	587	917	959	1,170	1,469
AOL Time Warner	1,062	1,100	1,704	1,704	2,388	2,434
Insight Communications	52	63	106	106	189	189
Total	4,146	4,379	6,727	6,930	9,893	10,686
Net Additions						
Adelphia	58	48	270	257	305	298
AT&T (1)	543	623	799	748	801	921
Cablevision	52	65	236	262	190	239
Charter Communications	45	80	313	410	339	361
Comcast (2)	94	142	310	413	511	614
Cox Communications	88	105	435	477	253	510
AOL Time Warner	182	220	824	824	684	730
Insight Communications	22	33	54	55	83	82
Total	594	827	3,242	3,445	3,166	3,755

(1) Revised 2001E estimates for digital and data subscribers pro forma for system sales to Charter and MediaCom.
(2) Revised 2001E estimates pro forma for AT&T swaps and acquisitions.

Source: Morgan Stanley Research

In its most basic form, home networking can refer to two or more home PCs sharing a pipe to the network. In its most sophisticated form, home networking refers to multiple devices in the home, including the television, a PC, and non-PC digital devices, all able to communicate to users both inside and outside the home. Interestingly, wireline solutions appear to be leading the charge in the development of uniform standards, with Home PNA (use of in-home phone lines) dominating the space. Wireless home networking is based on Bluetooth, "Wi-Fi" (802.11 standards a, b, e, and soon g), and Home RF.

> In one panel, networking vendors discussed the migration to residential networking from the more traditional enterprise space, and the potential business models cable operators could follow.

While each technology and platform exhibits specific benefits to the network operator and the end-user, it is the potential business models for home networking that perhaps remain the critical element. Mr. Silva pointed out that he believes cable operators should take the lead in pushing home networking as a premium service to subscribers. Other potential models may include service fees generated through installations for subscribers who do not want to attempt a complex self-install. This would allow MSOs to further leverage their existing technician force. Another model could include packaging the service with digital video offerings as a way to accelerate unit growth. Another recurring revenue model might exist through offering network management and security services.

> We think the MSOs must move the home networking purchase model from a retail aftermarket purchase, to an integrated solution included in their basic video and cable modem offerings.

To evolve home networking to a high return business, we believe the MSOs must move the purchase model from a retail aftermarket purchase of consumer products, to an integrated solution built into basic video and cable modem service. In addition, we believe the MSOs must educate the consumer on the services he/she is able to receive through a broadband networked home. The panel concurred that the majority of cable subscribers are not likely to buy home networking in itself, but instead will buy incremental services that can be implemented through networking.

DSL Deployments Continue at a Slower Pace

The residential DSL deployments by the RBOCs have taken on a new look in 2001. Higher prices and slower deployments characterize the more cautious outlook for the residential DSL market compared to 12 months ago. SBC Communications (SBC, $39.70, Strong Buy, $55 price target) led the market with the first significant price hike, bringing much of its subscriber base up to $50 a month in an effort to drive toward profitability earlier.

RBOCs raise DSL prices

- Prices at $50 per month, a $10 increase in some markets.
- Effort to move toward profitability sooner on DSL deployment.
- Operating costs, particularly customer service, marketing, and maintenance, have been higher than expected.
- Subscriber acquisition costs have been about $200–300 more for RBOCs than for the cable operators.

According to Morgan Stanley telecom analyst Simon Flannery, the price increase for DSL slowed demand modestly, but significantly improved the economics. Simon expects the price to drop over time, with new services such as video streaming offsetting the decline.

Revenue growth has also been offset by DSL subscribers who disconnect their second lines; about 50% of DSL and cable modem subscribers disconnect the second line after four months of service.

Simon adds that the initial DSL deployment was a negative NPV investment, as operating costs such as customer service and maintenance were a lot higher than the RBOCs had expected. In addition the subscriber acquisition costs - capital costs of $350–375 per subscriber and additional $350 of marketing expense - have placed downward pressure on returns.

Exhibit 6

Subscriber Acquisition Costs: Cable Modem vs. DSL

	Cable Modem	Residential DSL
Marketing per Gross Add	$200	$350
Modem Cost	$185	$100
Other Variable CapEx	$75	$250
Total	$460	$700

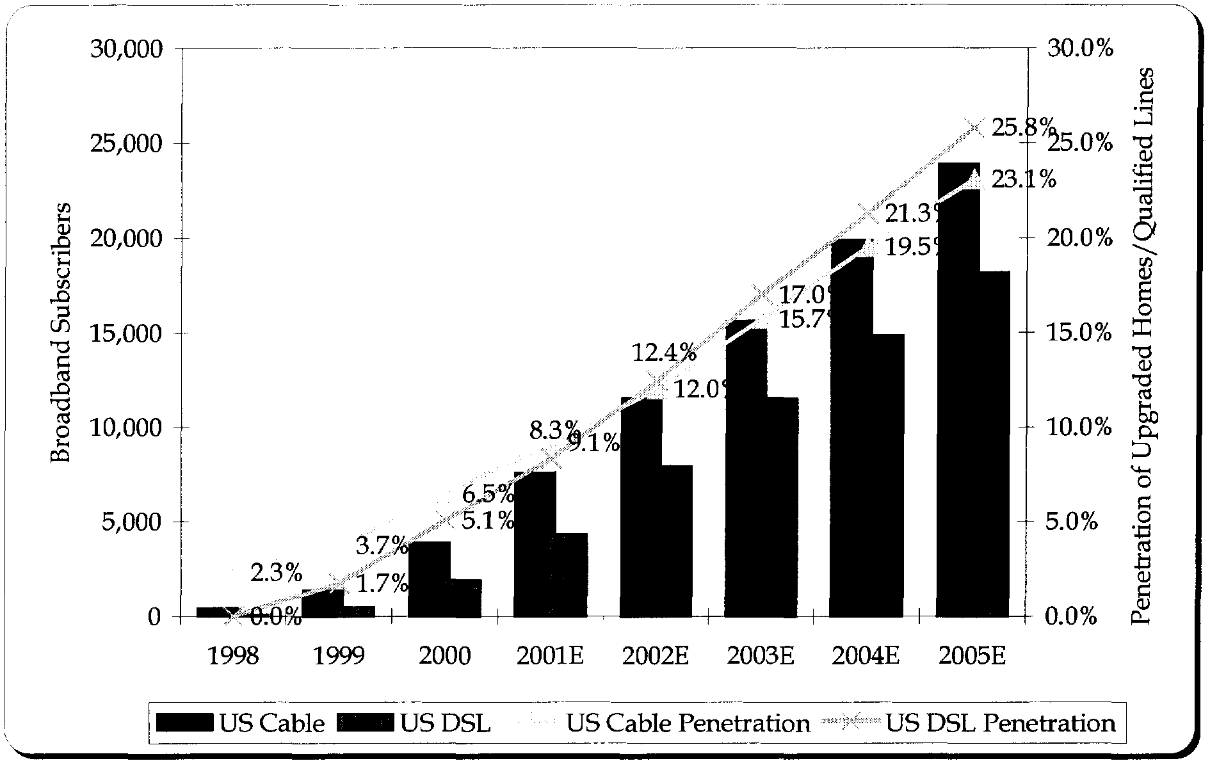
Source: Morgan Stanley Research

Other variable capital spending relates to installation expense, and incremental CMTS and DSLAM capacity.

The $700–750 total upfront costs per DSL addition include only $100 for the DSL modem. Overall, upfront acquisition costs per gross DSL addition are approximately $200–300 more than for the typical cable operator. Cable companies are particularly benefiting from the increased scale economics the HFC network provides them, where distance limitations are minimal compared to DSL deployments.

Exhibit 7

U.S. Cable Modem and Residential DSL Forecast



Source: Morgan Stanley Research

Exhibit 8

Consumer Broadband Forecast, 1999 - 2006E

		1999	2000	2001E	2002E	2003E	2004E	2005E	2006E
Consumer Internet Addressable Market (000s)									
US Households		103,234	104,370	105,518	106,679	107,852	109,038	110,238	111,450
Growth in US Households		1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
PC / Internet Device Households		41,294	46,966	53,814	61,874	69,025	76,327	82,678	89,160
Penetration of Total HHs		40%	45%	51%	58%	64%	70%	75%	80%
Primary Subscriptions by Provider									
Cable Modem		1,348	3,854	7,543	11,550	15,605	19,870	23,899	27,914
DSL Providers		445	1,901	4,285	7,909	11,495	14,819	18,179	21,388
Other (Satellite, Fixed Wireless, FTTH)		100	500	1,000	1,500	2,500	4,000	6,000	8,500
Dial-up		32,154	34,367	34,639	34,853	33,354	31,687	28,982	26,191
Total Primary Consumer Internet Households		**34,048**	**40,623**	**47,467**	**55,813**	**62,954**	**70,377**	**77,060**	**83,993**
Penetration of PC / Internet Device HHs		82%	86%	88%	90%	91%	92%	93%	94%
Penetration of Total HHs		33%	39%	45%	52%	58%	65%	70%	75%
CM / DSL only Mkt share split	CM	75%	67%	64%	59%	58%	57%	57%	57%
	DSL	25%	33%	36%	41%	42%	43%	43%	43%
Mkt. Share - Primary Access Method									
Cable Modem		4.0%	9.5%	15.9%	20.7%	24.8%	28.2%	31.0%	33.2%
DSL Providers		1.3%	4.7%	9.0%	14.2%	18.3%	21.1%	23.6%	25.5%
Other (Satellite, Fixed Wireless, FTTH)		0.3%	1.2%	2.1%	2.7%	4.0%	5.7%	7.8%	10.1%
Dial-up		94.4%	84.6%	73.0%	62.4%	53.0%	45.0%	37.6%	31.2%
Broadband/Dial-up Overlap Subscribers		1,704	5,317	7,697	11,528	14,800	17,410	21,635	26,011
% Broadband Subs w/ Dial-up Back-up		90%	85%	60%	55%	50%	45%	45%	45%
Total Subs by Access Method (incl Overlap)									
Cable Modem		1,348	3,854	7,543	11,550	15,605	19,870	23,899	27,914
DSL Providers		445	1,901	4,285	7,909	11,495	14,819	18,179	21,388
Other (Satellite, Fixed Wireless, FTTH)		100	500	1,000	1,500	2,500	4,000	6,000	8,500
Dial-up		33,859	39,684	42,335	46,381	48,154	49,098	50,617	52,202
Total Consumer Internet Subscriptions		**35,752**	**45,940**	**55,163**	**67,340**	**77,754**	**87,787**	**98,695**	**110,004**
% Growth		40.6%	28.5%	20.1%	22.1%	15.5%	12.9%	12.4%	11.5%
Penetration of Online Households - Incl. Overlap									
Cable Modem		4%	9%	16%	21%	25%	28%	31%	33%
DSL Providers		1%	5%	9%	14%	18%	21%	24%	25%
Other (Satellite, Fixed Wireless, FTTH)		0%	1%	2%	3%	4%	6%	8%	10%
Dial-up		99%	98%	89%	83%	76%	70%	66%	62%
Internet Penetration of Households - Incl. Overlap									
Cable Modem		1%	4%	7%	11%	14%	18%	22%	25%
DSL Providers		0%	2%	4%	7%	11%	14%	16%	19%
Other (Satellite, Fixed Wireless, FTTH)		0%	0%	1%	1%	2%	4%	5%	8%
Dial-up		33%	38%	40%	43%	45%	45%	46%	47%
Cable Modem Homes Passed		35,488	58,508	81,237	94,666	97,653	100,276	102,096	103,938
% of Households Passed		34%	56%	77%	89%	91%	92%	93%	93%
Take Rate		4%	7%	9%	12%	16%	20%	23%	27%
DSL Homes Passed (adjusted for qualification rates)		25,809	37,573	51,548	63,601	67,515	69,623	70,389	71,163
% of Homes Passed		25%	36%	49%	65%	75%	80%	80%	80%
Take Rate		2%	5%	8%	12%	17%	21%	26%	30%

Source: Morgan Stanley Research

Exhibit 9

High-Speed Data Deployment

(In Thousands)

	Actual Results, Not Adjusted for Pending Acquisitions							
	1Q00	2Q00	3Q00	4Q00	1Q01	2Q01E	3Q01E	4Q01E
Adelphia	1,971	2,272	2,572	3,716	3,581	4,682	5,557	7,215
AT&T (1)	5,800	6,818	7,596	8,518	15,466	15,618	15,770	16,037
Cablevision	976	1,180	1,478	2,000	2,303	2,809	3,314	4,023
Charter Communications	5,081	5,202	4,580	5,551	5,689	6,066	6,444	7,060
Comcast	4,224	4,410	5,085	6,360	7,913	8,934	9,955	10,443
Cox Communications	5,015	5,646	5,945	7,123	7,756	8,056	8,356	8,472
Insight Communications	700	915	1,054	1,204	1,568	1,598	1,638	1,691
AOL Time Warner	9,932	10,988	12,045	13,102	13,983	14,863	15,743	16,623
Other	3,588	4,338	4,838	3,957	4,000	4,500	5,000	9,551
US HSCDS Homes Passed	42,136	48,090	51,809	58,442	62,258	67,125	71,776	81,115
RCN Corporation	602	831	1,006	1,100	1,184	1,274	1,366	1,475
Rogers Communications	2,630	2,591	2,601	2,631	2,657	2,684	2,710	2,737
Cogeco	930	892	959	1,062	1,109	1,140	1,188	1,237
Shaw Communications	1,631	1,705	1,889	2,196	2,389	2,728	2,788	2,849
Total Canada and Other	5,793	6,019	6,455	6,990	7,339	7,824	8,053	8,297
Total North America	47,929	54,109	58,264	65,431	69,597	74,950	79,829	89,412
Adelphia	50	71	105	149	197	252	323	406
AT&T (1)	294	365	507	657	1,280	1,401	1,539	1,716
Cablevision	71	93	140	239	304	369	427	500
Charter Communications	95	122	157	225	305	403	530	634
Comcast	195	237	304	400	542	646	766	905
Cox Communications	260	320	399	482	587	704	828	959
Insight Communications	12	19	24	30	63	76	91	106
AOL Time Warner	416	533	669	880	1,100	1,334	1,580	1,704
Other	111	136	161	236	350	375	380	491
US HSCDS Subscribers	1,774	2,220	2,845	3,788	4,729	5,558	6,464	7,421
Growth %	222.0%	196.5%	181.5%	185.5%	166.5%	150.3%	127.2%	95.9%
RCN Corporation	27	40	52	67	81	95	108	122
Rogers Communications	215	266	301	312	347	383	422	469
Cogeco	57	64	74	85	94	100	108	113
Shaw Communications	219	248	293	352	417	486	551	596
Total Canada and Other	518	618	720	816	940	1,063	1,189	1,300
Growth %	187.7%	169.4%	151.3%	84.2%	81.3%	72.1%	65.1%	59.3%
Total North America	2,293	2,838	3,566	4,604	5,668	6,621	7,653	8,721
Growth %	213.5%	190.1%	174.9%	160.2%	147.2%	133.3%	114.6%	89.4%

Source: Morgan Stanley Research

(1) Include MediaOne subscribers in AT&T Broadband as of 1Q01.

Exhibit 10

High-Speed Data Deployment

(In Thousands)

	Pro Forma 1999	Pro Forma 2000	Pro Forma 2001E	2002E	2003E	2004E	2005E	2006E
Adelphia	1,671	3,716	7,215	8,322	8,447	8,573	8,702	8,832
AT&T (1)	9,748	13,886	19,813	23,217	23,565	23,919	24,278	24,642
Cablevision	874	2,000	4,023	4,439	4,586	4,651	4,720	4,791
Charter Communications	3,468	5,551	7,060	9,141	10,477	11,510	11,717	11,927
Comcast	3,652	6,360	10,443	14,152	14,364	14,579	14,798	15,020
Cox Communications	4,099	7,123	8,472	10,176	10,329	10,484	10,641	10,800
Insight Communications	580	1,204	1,691	2,079	2,110	2,142	2,174	2,206
AOL Time Warner	8,875	13,102	16,623	16,873	17,126	17,383	17,644	17,908
Other	2,500	5,500	5,775	6,064	6,367	6,685	7,020	7,371
US HSCDS Homes Passed	35,466	58,442	81,115	94,462	97,370	99,926	101,692	103,498
RCN Corporation	551	1,100	1,475	1,715	1,906	1,906	1,906	1,906
Rogers Communications	2,630	2,631	2,737	2,769	2,802	2,852	2,895	2,961
Cogeco	921	1,062	1,237	1,250	1,267	1,282	1,295	1,308
Shaw Communications	1,542	2,196	2,849	2,898	3,010	3,101	3,151	3,200
Total Canada and Other	5,643	6,990	8,297	8,633	8,985	9,141	9,247	9,375
Total North America	41,109	65,431	89,412	103,095	106,356	109,067	110,940	112,873
Adelphia	37	149	406	703	1,052	1,464	1,930	2,504
AT&T (1)	363	967	1,716	2,637	3,529	4,561	5,581	6,597
Cablevision	52	239	500	739	974	1,204	1,419	1,599
Charter Communications	66	225	634	996	1,442	1,965	2,543	3,167
Comcast	159	492	905	1,519	2,050	2,570	2,922	3,153
Cox Communications	204	482	959	1,469	1,975	2,449	2,843	3,182
Insight Communications	8	52	106	189	275	366	454	546
AOL Time Warner	307	880	1,704	2,434	3,210	3,981	4,710	5,504
Other	130	303	491	661	816	960	1,094	1,221
US HSCDS Subscribers	1,327	3,788	7,421	11,346	15,323	19,520	23,495	27,474
Growth %	234.0%	185.5%	95.6%	52.9%	35.0%	27.4%	20.4%	16.9%
RCN Corporation	22	67	122	204	282	350	404	440
Rogers Communications	186	312	469	559	639	707	766	820
Cogeco	51	85	113	146	179	223	265	294
Shaw Communications	185	352	596	723	867	999	1,105	1,191
Total Canada and Other	443	816	1,300	1,632	1,969	2,279	2,541	2,745
Growth %	229.5%	84.2%	59.3%	25.5%	20.6%	15.8%	11.5%	8.0%
Total North America	1,770	4,604	8,721	12,978	17,291	21,799	26,036	30,218
Growth %	232.8%	160.2%	89.2%	48.8%	33.2%	26.1%	19.4%	16.1%

Source: Morgan Stanley Research

(1) Pro forma for all closed and pending transactions.

Exhibit 11

Return on Invested Capital - Wholesale Model

($ Millions)

	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
Consolidated EBITDA	$3.5	$28.1	$117.7	$220.3	$323.8	$427.5	$515.6	$602.8	$680.7	$744.6	$797.4
Less: Depreciation Expense	9.8	22.6	31.6	42.5	51.1	58.1	64.4	70.4	76.2	81.8	87.2
EBITA	($6.3)	$5.4	$86.0	$177.8	$272.7	$369.5	$451.3	$532.4	$604.4	$662.9	$710.2
Marginal Effective Tax Rate	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Tax-Affected EBITA	($3.8)	$3.3	$51.6	$106.7	$163.6	$221.7	$270.8	$319.4	$362.7	$397.7	$426.1
Current Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Less: Cash and Equivalents	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Working Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Gross Plant	$137.1	$179.7	$263.3	$331.5	$383.3	$429.9	$471.0	$513.9	$553.3	$591.3	$629.3
Less: Accumulated Depreciation	$9.8	$26.8	$47.5	$68.5	$85.7	$96.8	$99.8	$102.8	$105.7	$108.4	$111.1
Net Plant	$127.3	$152.9	$215.9	$263.0	$297.6	$333.1	$371.2	$411.1	$447.7	$483.0	$518.2
Gross Intangible Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Accumulated Amortization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Intangible Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Assets Employed	$127.3	$152.9	$215.9	$263.0	$297.6	$333.1	$371.2	$411.1	$447.7	$483.0	$518.2
Less: Current Liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Assets Employed	$127.3	$152.9	$215.9	$263.0	$297.6	$333.1	$371.2	$411.1	$447.7	$483.0	$518.2
Average Assets Employed	$63.6	$140.1	$184.4	$263.0	$280.3	$315.3	$352.2	$391.2	$429.4	$465.3	$500.6
Return on Net Assets Employed	-5.9%	2.3%	28.0%	40.6%	58.4%	70.3%	76.9%	81.7%	84.5%	85.5%	85.1%

Source: Morgan Stanley Research

Exhibit 12

Return On Invested Capital - Retail Model

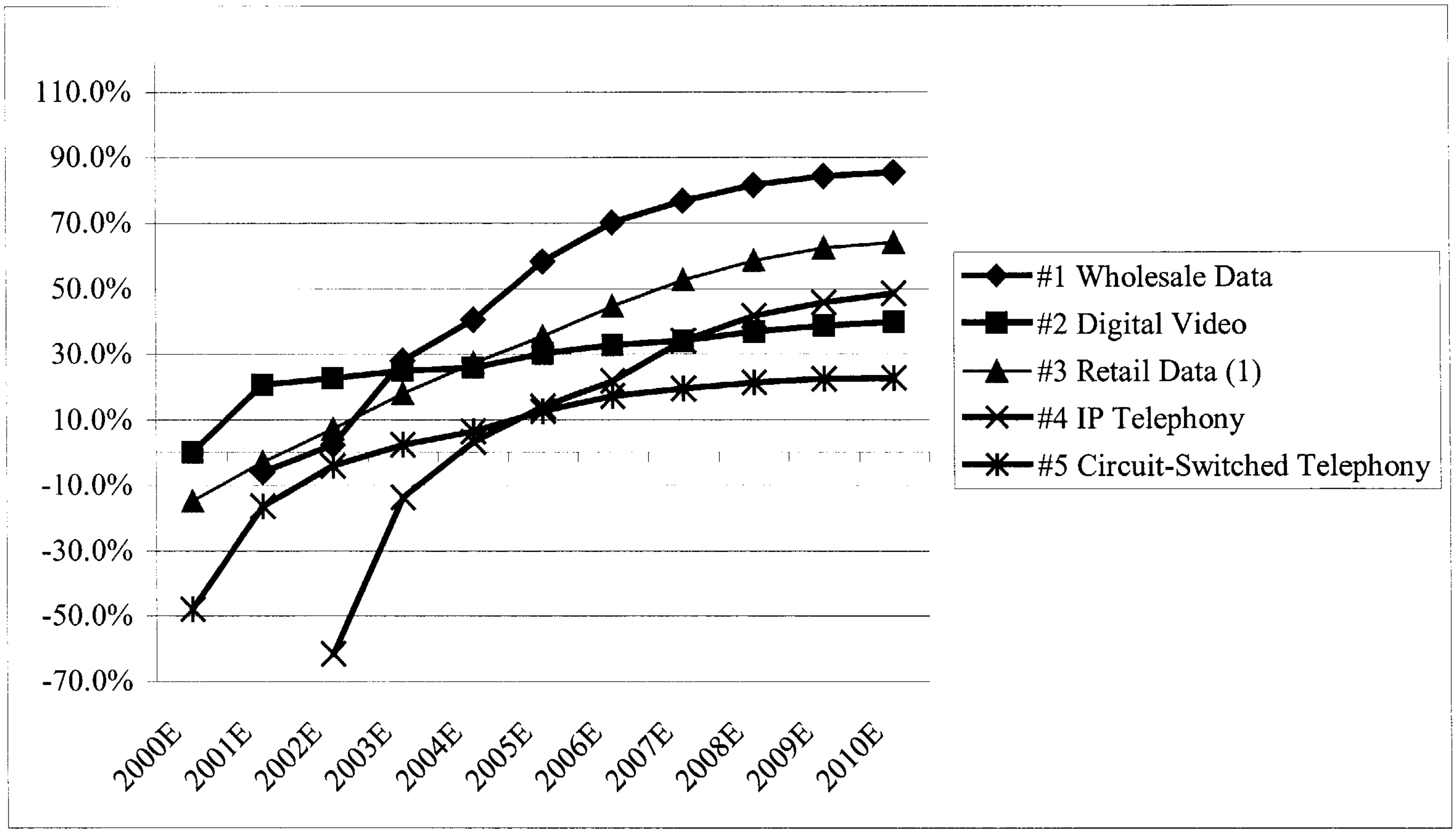
($ Millions)

	2000	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E
Consolidated EBITDA	$11.0	$51.0	$122.9	$204.1	$285.0	$354.0	$435.8	$513.0	$581.8	$640.9	$690.6
Less: Depreciation Expense	50.2	66.1	79.4	90.6	100.3	108.3	114.3	118.4	121.7	125.5	129.9
EBITA	($39.2)	($15.0)	$43.5	$113.5	$184.7	$245.7	$321.5	$394.6	$460.1	$515.4	$560.7
Marginal Effective Tax Rate	0%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Tax-Affected EBITA	($39.2)	($9.0)	$26.1	$68.1	$110.8	$147.4	$192.9	$236.8	$276.1	$309.3	$336.4
Current Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Less: Cash and Equivalents	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Working Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Gross Plant	$410.7	$514.6	$597.1	$671.2	$733.3	$782.5	$818.1	$839.2	$864.0	$892.8	$926.0
Less: Accumulated Depreciation	$110.4	$168.2	$226.6	$280.6	$326.1	$359.6	$378.1	$379.6	$381.4	$383.4	$385.8
Net Plant	$300.2	$346.4	$370.6	$390.6	$407.2	$423.0	$440.1	$459.6	$482.7	$509.3	$540.2
Gross Intangible Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Accumulated Amortization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Intangible Assets	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Assets Employed	$300.2	$346.4	$370.6	$390.6	$407.2	$423.0	$440.1	$459.6	$482.7	$509.3	$540.2
Less: Current Liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Assets Employed	$300.2	$346.4	$370.6	$390.6	$407.2	$423.0	$440.1	$459.6	$482.7	$509.3	$540.2
Average Assets Employed	$266.0	$323.3	$358.5	$380.6	$407.2	$415.1	$431.5	$449.9	$471.2	$496.0	$524.8
Return on Net Assets Employed	-14.7%	-2.8%	7.3%	17.9%	27.2%	35.5%	44.7%	52.6%	58.6%	62.3%	64.1%

Source: Morgan Stanley Research

Exhibit 13

Provisioning Multiple Services over the HFC Network, ROIC Analysis

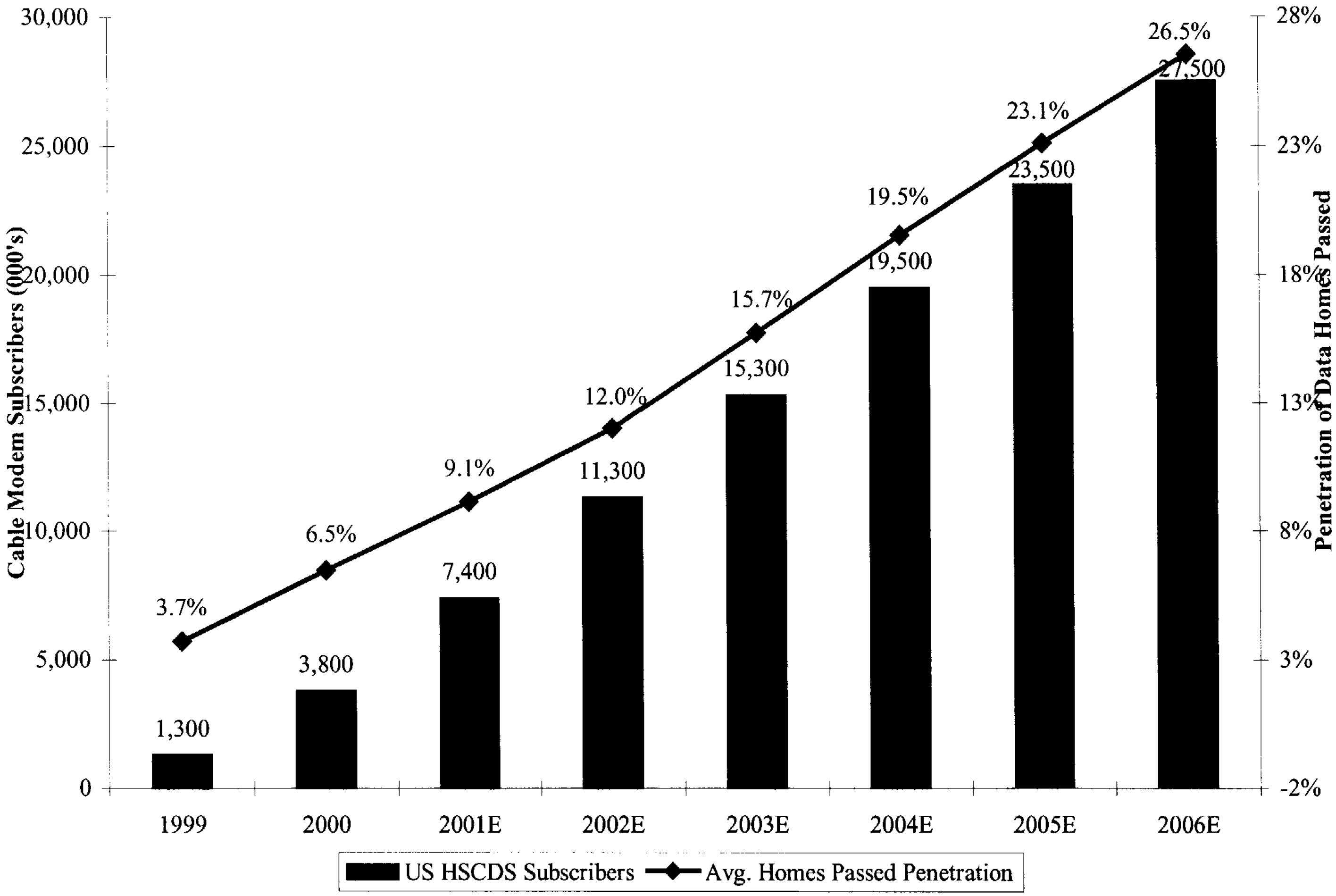


Source: Morgan Stanley Research

(1) Note that our retail data model assumes zero advertising and e-commerce revenues throughout the life of the model. These would be incrementally positive for the ROIC of retail data if they do materialize.

Exhibit 14

U.S. Cable Operators Data Subscribers, Penetration Of Upgraded Homes



Source: Morgan Stanley Research

Exhibit 15

Penetration Profile - Retail Model

	2000	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
Homes Passed for CATV	10,613,636	10,772,840	10,934,433	11,098,449	11,264,926	11,433,900	11,605,408	11,779,489	11,956,182	12,135,524	12,317,557	12,502,321
% Change	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Homes Passed for HSCDS	8,171,544	9,910,117	10,933,769	11,097,775	11,264,242	11,433,206	11,604,704	11,778,774	11,955,456	12,134,788	12,316,809	12,501,562
% Change	50.3%	21.3%	10.3%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
% of Total Homes Passed	77.0%	92.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Homes Passed with PC's (PCHH)	6,394,698	6,718,804	6,999,400	7,244,883	7,462,621	7,658,817	7,838,553	8,005,913	8,164,136	8,315,763	8,462,780	8,606,727
% Change	6.3%	5.1%	4.2%	3.5%	3.0%	2.6%	2.3%	2.1%	2.0%	1.9%	1.8%	1.7%
% of Total Homes Passed	60.2%	62.4%	64.0%	65.3%	66.2%	67.0%	67.5%	68.0%	68.3%	68.5%	68.7%	68.8%
On-Line Households	5,002,446	5,743,750	6,518,406	7,319,404	8,139,867	8,973,267	9,107,865	9,244,483	9,383,151	9,523,898	9,666,756	9,811,758
% Change	16.3%	14.8%	13.5%	12.3%	11.2%	10.2%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
% of Total Homes Passed	47.1%	53.3%	59.6%	65.9%	72.3%	78.5%	78.5%	78.5%	78.5%	78.5%	78.5%	78.5%
% of Total PCHH	78.2%	85.5%	93.1%	101.0%	109.1%	117.2%	116.2%	115.5%	114.9%	114.5%	114.2%	114.0%
CATV Subscribers	6,898,863	7,002,346	7,107,381	7,213,992	7,322,202	7,432,035	7,543,515	7,656,668	7,771,518	7,888,091	8,006,412	8,126,508
% Change	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
% Homes Passed for CATV	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%
HSCDS Subscribers	543,363	886,515	1,262,810	1,638,884	2,001,216	2,348,246	2,674,306	2,966,837	3,222,043	3,441,464	3,632,012	3,799,300
% Change	95.4%	63.2%	42.4%	29.8%	22.1%	17.3%	13.9%	10.9%	8.6%	6.8%	5.5%	4.6%
HSCDS Subscribers as %												
Homes Passed for CATV	5.1%	8.2%	11.5%	14.8%	17.8%	20.5%	23.0%	25.2%	26.9%	28.4%	29.5%	30.4%
Homes Passed for HSCDS	6.6%	8.9%	11.5%	14.8%	17.8%	20.5%	23.0%	25.2%	27.0%	28.4%	29.5%	30.4%
Homes Passed with PC's	8.5%	13.2%	18.0%	22.6%	26.8%	30.7%	34.1%	37.1%	39.5%	41.4%	42.9%	44.1%
On-Line Households	10.9%	15.4%	19.4%	22.4%	24.6%	26.2%	29.4%	32.1%	34.3%	36.1%	37.6%	38.7%
CATV Subscribers	7.9%	12.7%	17.8%	22.7%	27.3%	31.6%	35.5%	38.7%	41.5%	43.6%	45.4%	46.8%
Beginning HSCDS Subscribers	278,126	543,363	886,515	1,262,810	1,638,884	2,001,216	2,348,246	2,674,306	2,966,837	3,222,043	3,441,464	3,632,012
Gross Installations	316,580	450,393	564,361	666,243	726,343	781,976	828,315	856,646	874,094	885,772	897,895	910,419
Disconnects (ie., Churn)	51,343	107,241	188,066	290,169	364,010	434,946	502,255	564,114	618,888	666,351	707,348	743,131
Churn % Avg. HSCDS Subs.	12.5%	15.0%	17.5%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Ending HSCDS Subscribers	543,363	886,515	1,262,810	1,638,884	2,001,216	2,348,246	2,674,306	2,966,837	3,222,043	3,441,464	3,632,012	3,799,300
Average HSCDS Subscribers	410,745	714,939	1,074,663	1,450,847	1,820,050	2,174,731	2,511,276	2,820,572	3,094,440	3,331,754	3,536,738	3,715,656
Net Subscriber Additions	265,237	343,152	376,295	376,073	362,333	347,030	326,060	292,531	255,206	219,421	190,548	167,288
Weekly Addition Rate	5,101	6,599	7,236	7,232	6,968	6,674	6,270	5,626	4,908	4,220	3,664	3,217

Source: Morgan Stanley Research

Exhibit 16

Hypothetical High-Speed Data Model - Retail Service

	2000	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
Bundled Serv. Rev. (incl. Modem)	$177.4	$300.3	$451.4	$609.4	$764.4	$913.4	$1,054.7	$1,184.6	$1,299.7	$1,399.3	$1,485.4	$1,560.6
Bundled Service Rev. per Subscr.	$36.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00
Avg. Bundled Service Subscribers	410,745	714,939	1,074,663	1,450,847	1,820,050	2,174,731	2,511,276	2,820,572	3,094,440	3,331,754	3,536,738	3,715,656
Bundled Service Subs. as % Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Premium Services (E-Commerce/Advert./Other)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Premium Revenue. per Subscr.	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
% Change Premium Per Sub.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Avg. Premium Subscribers	0	714,939	1,074,663	1,450,847	1,820,050	2,174,731	2,511,276	2,820,572	3,094,440	3,331,754	3,536,738	3,715,656
Premium Subs. as % Total	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Service Revenue	$177.4	$300.3	$451.4	$609.4	$764.4	$913.4	$1,054.7	$1,184.6	$1,299.7	$1,399.3	$1,485.4	$1,560.6
% Change	88.9%	69.2%	50.3%	35.0%	25.4%	19.5%	15.5%	12.3%	9.7%	7.7%	6.2%	5.1%
Total Basic & Prem. Rev. per Subscr.	$36.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00	$35.00
Installation Revenue	$15.8	$22.5	$28.2	$33.3	$36.3	$39.1	$41.4	$42.8	$43.7	$44.3	$44.9	$45.5
Installation Fee	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00
% Change	-50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Gross Subscriber Installations	316,580	450,393	564,361	666,243	726,343	781,976	828,315	856,646	874,094	885,772	897,895	910,419
Total Revenue	$193.3	$322.8	$479.6	$642.7	$800.7	$952.5	$1,096.2	$1,227.5	$1,343.4	$1,443.6	$1,530.3	$1,606.1
% Change	72.0%	67.0%	48.6%	34.0%	24.6%	19.0%	15.1%	12.0%	9.4%	7.5%	6.0%	5.0%
Total Revenue per Subscriber	$39.21	$37.62	$37.19	$36.91	$36.66	$36.50	$36.37	$36.27	$36.18	$36.11	$36.06	$36.02

Source: Morgan Stanley Research

Exhibit 17

Hypothetical High Speed Data Model - Retail Service

	2000	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
ISP Affiliate Fee	$53.2	$90.1	$135.4	$182.8	$229.3	$274.0	$316.4	$355.4	$389.9	$419.8	$445.6	$468.2
ISP Affiliation Fee as per Sub.	$10.80	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50
% of Service Rev.	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Installation Expense	$15.8	$22.5	$28.2	$33.3	$36.3	$39.1	$41.4	$42.8	$43.7	$44.3	$44.9	$45.5
Installation Expense as % Total Rev.	8.2%	7.0%	5.9%	5.2%	4.5%	4.1%	3.8%	3.5%	3.3%	3.1%	2.9%	2.8%
Installation Exp. as % Install Rev.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Sales Expense	$55.4	$90.1	$112.9	$133.2	$145.3	$156.4	$149.1	$138.8	$127.4	$116.2	$106.0	$96.8
Sales Expense per Gross Addition	175.00	200.00	200.00	200.00	200.00	200.00	180.00	162.00	145.80	131.22	118.10	106.29
% Total Revenue	28.7%	27.9%	23.5%	20.7%	18.1%	16.4%	13.6%	11.3%	9.5%	8.1%	6.9%	6.0%
Customer Service Expense	$28.9	$34.5	$40.1	$44.6	$52.4	$64.5	$76.7	$88.7	$100.3	$111.2	$121.6	$131.6
Customer Service Representatives	513.4	595.8	671.7	725.4	827.3	988.5	1141.5	1282.1	1406.6	1514.4	1607.6	1688.9
Subscribers per CSR	800	1200	1600	2000	2200	2200	2200	2200	2200	2200	2200	2200
CSR Salary	56,275	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427	75,629	77,898
% Total Revenue	14.9%	10.7%	8.4%	6.9%	6.5%	6.8%	7.0%	7.2%	7.5%	7.7%	7.9%	8.2%
Technician Expense	$28.9	$34.5	$40.1	$44.6	$52.4	$64.5	$76.7	$88.7	$100.3	$111.2	$121.6	$131.6
Technicians	513.4	595.8	671.7	725.4	827.3	988.5	1141.5	1282.1	1406.6	1514.4	1607.6	1688.9
Subscribers per Tech	800	1200	1600	2000	2200	2200	2200	2200	2200	2200	2200	2200
Tech Salary	56,275	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427	75,629	77,898
% Total Revenue	14.9%	10.7%	8.4%	6.9%	6.5%	6.8%	7.0%	7.2%	7.5%	7.7%	7.9%	8.2%
Other G&A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Total Revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fully Allocated EBITDA	11.0	51.0	122.9	204.1	285.0	354.0	435.8	513.0	581.8	640.9	690.6	732.5
Fully Allocated EBITDA Margin	5.7%	15.8%	25.6%	31.8%	35.6%	37.2%	39.8%	41.8%	43.3%	44.4%	45.1%	45.6%

Source: Morgan Stanley Research

Exhibit 18

Penetration Profile - Wholesale Model

	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
Homes Passed for CATV	10,000,000	10,150,000	10,302,250	10,456,784	10,613,636	10,772,840	10,934,433	11,098,449	11,264,926	11,433,900	11,605,408
% Change	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Homes Passed for HSCDS	2,500,000	7,612,500	7,726,688	7,842,588	7,960,227	8,079,630	8,200,824	8,323,837	8,448,694	8,575,425	8,704,056
% Change	0.0%	204.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
% of Total Homes Passed	25.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Homes Passed with PC's (PCHH)	6,236,800	6,497,265	6,725,137	6,927,255	7,109,376	7,276,218	7,431,572	7,578,443	7,719,193	7,855,663	7,989,284
% Change	5.1%	4.2%	3.5%	3.0%	2.6%	2.3%	2.1%	2.0%	1.9%	1.8%	1.7%
% of Total Homes Passed	62.4%	64.0%	65.3%	66.2%	67.0%	67.5%	68.0%	68.3%	68.5%	68.7%	68.8%
On-Line Households	5,331,695	6,050,778	6,794,312	7,555,916	8,329,527	8,454,470	8,581,287	8,710,007	8,840,657	8,973,267	9,107,865
% Change	14.8%	13.5%	12.3%	11.2%	10.2%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
% of Total Homes Passed	53.3%	59.6%	65.9%	72.3%	78.5%	78.5%	78.5%	78.5%	78.5%	78.5%	78.5%
% of Total PCHH	85.5%	93.1%	101.0%	109.1%	117.2%	116.2%	115.5%	114.9%	114.5%	114.2%	114.0%
CATV Subscribers	6,500,000	6,597,500	6,696,463	6,796,909	6,898,863	7,002,346	7,107,381	7,213,992	7,322,202	7,432,035	7,543,515
% Change	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
% Homes Passed for CATV	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%
HSCDS Subscribers	50,000	253,750	718,874	1,120,241	1,454,277	1,798,083	2,151,875	2,499,229	2,792,558	3,042,190	3,256,510
% Change	0.0%	407.5%	183.3%	55.8%	29.8%	23.6%	19.7%	16.1%	11.7%	8.9%	7.0%
HSCDS Subscribers as %											
Homes Passed for CATV	0.5%	2.5%	7.0%	10.7%	13.7%	16.7%	19.7%	22.5%	24.8%	26.6%	28.1%
Homes Passed for HSCDS	2.0%	3.3%	9.3%	14.3%	18.3%	22.3%	26.2%	30.0%	33.1%	35.5%	37.4%
Homes Passed with PC's	0.8%	3.9%	10.7%	16.2%	20.5%	24.7%	29.0%	33.0%	36.2%	38.7%	40.8%
On-Line Households	0.9%	4.2%	10.6%	14.8%	17.5%	21.3%	25.1%	28.7%	31.6%	33.9%	35.8%
CATV Subscribers	0.8%	3.8%	10.7%	16.5%	21.1%	25.7%	30.3%	34.6%	38.1%	40.9%	43.2%
Beginning HSCDS Subscribers	0	50,000	253,750	718,874	1,120,241	1,454,277	1,798,083	2,151,875	2,499,229	2,792,558	3,042,190
Gross Installations	53,750	230,328	562,386	585,279	591,488	669,041	748,788	812,464	822,509	833,106	844,190
Disconnects (ie., Churn)	3,750	26,578	97,262	183,911	257,452	325,236	394,996	465,110	529,179	583,475	629,870
Churn % Avg. HSCDS Subs.	15.0%	17.5%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Ending HSCDS Subscribers	50,000	253,750	718,874	1,120,241	1,454,277	1,798,083	2,151,875	2,499,229	2,792,558	3,042,190	3,256,510
Average HSCDS Subscribers	25,000	151,875	486,312	919,557	1,287,259	1,626,180	1,974,979	2,325,552	2,645,894	2,917,374	3,149,350
Net Subscriber Additions	50,000	203,750	465,124	401,367	334,036	343,805	353,792	347,354	293,330	249,632	214,320
Weekly Addition Rate	962	3,918	8,945	7,719	6,424	6,612	6,804	6,680	5,641	4,801	4,122

Source: Morgan Stanley Research

Exhibit 19

Hypothetical High-Speed Data Model - Wholesale Service

	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
Bundled Serv. Rev. (incl. Modem)	$8.1	$49.2	$157.6	$297.9	$417.1	$526.9	$639.9	$753.5	$857.3	$945.2	$1,020.4
Bundled Service Rev. per Subscr.	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
Avg. Bundled Service Subscribers	25,000	151,875	486,312	919,557	1,287,259	1,626,180	1,974,979	2,325,552	2,645,894	2,917,374	3,149,350
Bundled Service Subs. as % Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Premium Services (E-Commerce/Advert./Other)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Premium Revenue. per Subscr.	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
% Change Premium Per Sub.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Avg. Premium Subscribers	0	0	0	0	0	0	0	0	0	0	0
Premium Subs. as % Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Service Revenue	$8.1	$49.2	$157.6	$297.9	$417.1	$526.9	$639.9	$753.5	$857.3	$945.2	$1,020.4
% Change		507.5%	220.2%	89.1%	40.0%	26.3%	21.4%	17.8%	13.8%	10.3%	8.0%
Total Basic & Prem. Rev. per Subscr.	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
Installation Revenue	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Installation Fee	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
% Change	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Gross Subscriber Installations	53,750	230,328	562,386	585,279	591,488	669,041	748,788	812,464	822,509	833,106	844,190
Total Revenue	$8.1	$49.2	$157.6	$297.9	$417.1	$526.9	$639.9	$753.5	$857.3	$945.2	$1,020.4
% Change	0.0%	507.5%	220.2%	89.1%	40.0%	26.3%	21.4%	17.8%	13.8%	10.3%	8.0%
Total Revenue per Subscriber	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00

Source: Morgan Stanley

Exhibit 20

Hypothetical High-Speed Data Model - Wholesale Service (cont.)

	2001E	2002E	2003E	2004E	2005E	2006E	2007E	2008E	2009E	2010E	2011E
ISP Affiliate Fee	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
ISP Affiliation Fee as per Sub.	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
% of Service Rev.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Installation Expense	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Installation Expense as % Total Rev.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Installation Exp. as % Install Rev.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sales Expense	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Sales Expense per Gross Addition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% Total Revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Customer Service Expense	$1.0	$6.0	$19.9	$38.8	$46.7	$49.7	$62.1	$75.4	$88.3	$100.3	$111.5
Customer Service Representatives	16.7	101.3	324.2	613.0	715.1	739.2	897.7	1057.1	1202.7	1326.1	1431.5
Subscribers per CSR	1,500	1,500	1,500	1,500	1,800	2,200	2,200	2,200	2,200	2,200	2,200
CSR Salary	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427	75,629	77,898
% Total Revenue	11.9%	12.3%	12.7%	13.0%	11.2%	9.4%	9.7%	10.0%	10.3%	10.6%	10.9%
Technician Expense	$3.6	$15.1	$19.9	$38.8	$46.7	$49.7	$62.1	$75.4	$88.3	$100.3	$111.5
Technicians	62.5	253.1	324.2	613.0	715.1	739.2	897.7	1057.1	1202.7	1326.1	1431.5
Subscribers per Tech	400	600	1,500	1,500	1,800	2,200	2,200	2,200	2,200	2,200	2,200
Tech Salary	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427	75,629	77,898
% Total Revenue	44.7%	30.7%	12.7%	13.0%	11.2%	9.4%	9.7%	10.0%	10.3%	10.6%	10.9%
Other G&A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Total Revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fully Allocated EBITDA	3.5	28.1	117.7	220.3	323.8	427.5	515.6	602.8	680.7	744.6	797.4
Fully Allocated EBITDA Margin	43.3%	57.0%	74.7%	73.9%	77.6%	81.1%	80.6%	80.0%	79.4%	78.8%	78.1%

Source: Morgan Stanley Research